

1      **ABSTRACT**

2      Subject matter includes exemplary methods of reversible diffusion-based  
3      compression and an exemplary compression engine. In one implementation, a  
4      reversible diffusion function is applied to decrease high spatial frequency pixel  
5      values in an image or a prediction error image residue and to smooth variances  
6      between adjacent pixel values. An exemplary reversible diffusion function can  
7      increase data compression without loss of high frequency information yet operate  
8      with online encoders and decoders that lack significant processing power. An  
9      exemplary method transforms the data to make the data more amenable to  
10     compression schemes that utilize entropy transforms as an intermediate processing  
11     step, for example, prior to Huffman coding.

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